

ABSTRACT

A method and apparatus are provided for combining pilot symbols and Transmit Parameter Signalling (TPS) channels within an OFDM frame. The method uses Differential Space-Time Block Coding to encode a fast signalling message at an OFDM transmitter. At an OFDM receiver, the encoded fast signalling message can be decoded using differential feedback to recover information about the channel responses that would normally be carried by pilot symbols. In wireless data transmission employing adaptive modulation and coding, an instantaneous channel quality measurement, independent of the origin of interference for example, neighboring-cell interference, white thermal noise, or residual Doppler shift is provided. Using the correlation between a signal which has been symbol demapped, and one which has also been soft decoded and re-encoded, a channel quality indicator is produced. Another embodiment uses TPS data as pilot symbols by decoding TPS and then re-encoding.